



Solar & Qualified Opportunity Zones

Norfolk Solar Qualified Opportunity Zone Fund
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March 2021





How Ruth Started...at home

Green (living) roof



Solar hot water



Solar PV



Our home has
been on local
solar tour
since 2009



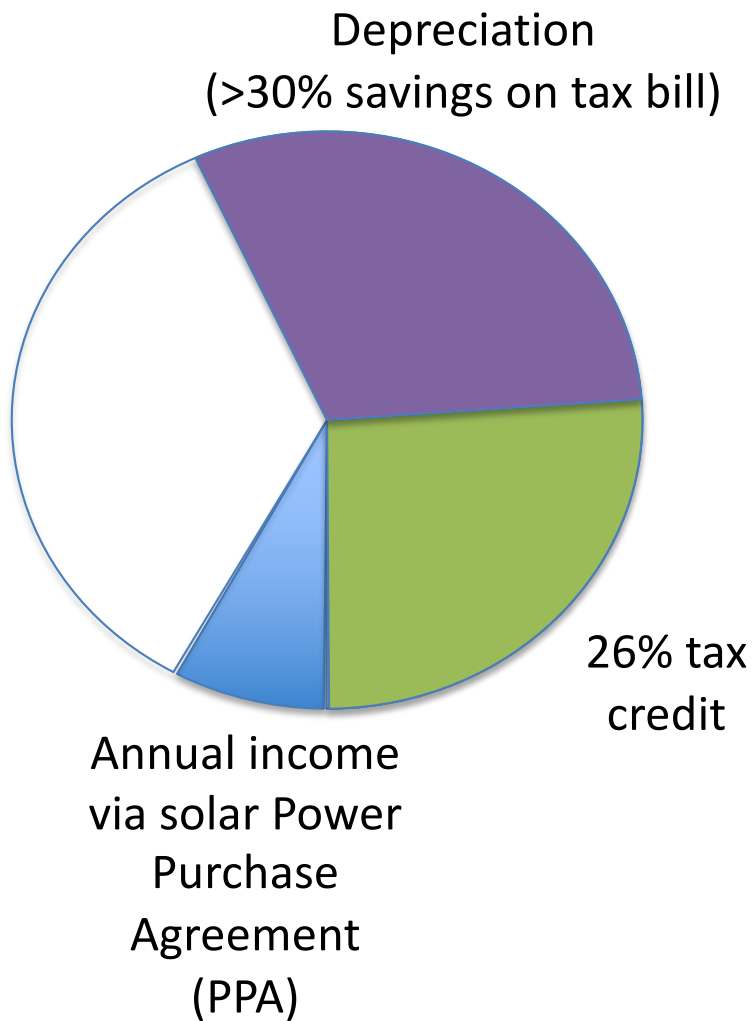
Image Virginian Pilot 3-6-19

Actions at home led to actions in the community....

Led parent group to put \$1M (600 kW) of solar on independent school, Norfolk Academy
No cost to school, parents re-paid in 7 years



Financing Solar on a Non-Profit

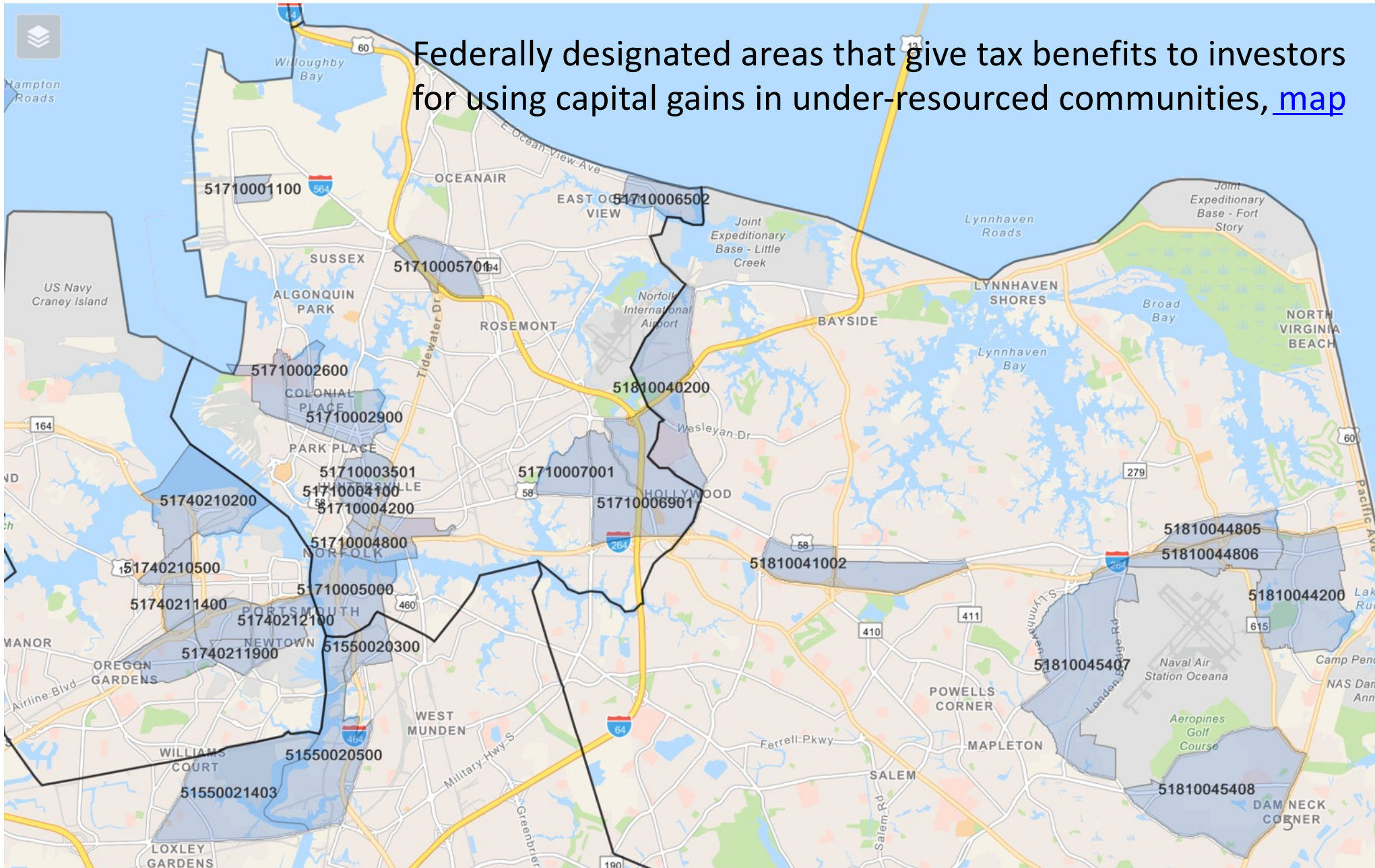


- Use LLC of individuals to get tax benefits
- No cost to non-profit
- Investors get money back in <10 years
- Works for churches, schools, museums – any non-profit or business
- Must have passive income to take credits
- Can add storage to be resilient



HR Qualified Opportunity Zones

Federally designated areas that give tax benefits to investors for using capital gains in under-resourced communities, [map](#)





Norfolk Solar QOZ Fund

- \$750K family fund started in 2019
- Installs solar in QOZs at no cost to businesses
- Hires & trains residents of QOZs as solar installers
 - Required in installer contract





Norfolk Solar QOZ Fund

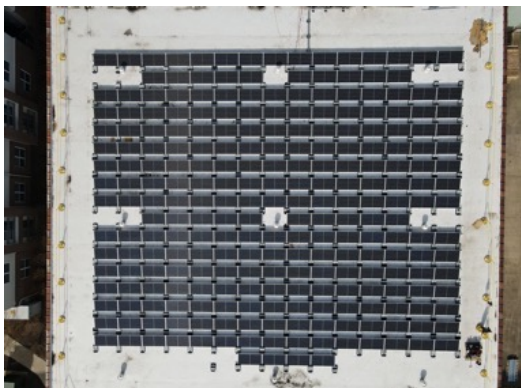
- Six solar systems complete:
 - Rooftops include four businesses and two nonprofits:
 - JD Miles: 100-year-old roofing company
 - CozyPure: organic bedding company
 - Norfolk Machine and Welding: family-owned
 - First Baptist Berkley: African American church
 - Ironclad Distillery: family-owned
 - Southside Girls and Boys Club
 - Very simple one-page PPAs with minimal FMV end-of-term
- Four Opportunity Zone residents hired and trained on-the-job -- first diversity in local solar installers
- Actively engaged with local environmental and social justice groups





Rancho Solar LLC

- NYC investor found us on-line based on press
- He duplicated Norfolk Solar QOZ Fund
- Will install additional \$750K of solar in Hampton Roads QOZs this year
- Two solar systems complete so far
 - Wesley Union AME Zion church
 - Norva Plastics, family owned





Pioneer Install of Home Solar w/PPA

- Virginia Clean Economy Act
 - PPA with residential legal for low-income as of July 1 2020 (see [backup](#))
- Plan to do two low-income residential customers this year to pave the way for others

HUD data	Persons in household					
FY 2020 annual income limits	1	2	3	4	5	6
Norfolk (80% local median)	\$46,200	\$52,800	\$59,400	\$66,000	\$71,300	\$76,600







Barriers

- Trust
 - Many minority-owned businesses drop out
- Roof condition
 - Many QOZ businesses lack capital for roof repairs
- Incentive
 - Many businesses & residents want short term benefit from day 1 to participate
- Legislation for installing on housing
- Tax complexity





PPAs in Virginia

- Limited knowledge of PPAs in Virginia
- Great way to leverage private wealth to benefit the disadvantaged
- Limited by business size and resident income
- FMV at end of term is grey area; trust issue
- SREC uncertainty leads to term uncertainty
- Not well known that residential PPAs currently allowed





Outreach to Under-Resourced

- Use pioneer example installs
- Civic leagues, churches, business council meetings
- Non-profits and service orgs: Mothers Out Front, VA Poor Peoples Campaign, VA Interfaith Power & Light, Foodbank, St. Paul's CDC
- City awareness and support
- Walkabouts with neighborhood resident
- Non-electronic methods: use newspapers or weeklies read in those areas, flyers posted in libraries
- Meetings at neighborhood central locations
- Standard customizable slide package



Gaps

- Method to discipline solar predators
- Removal of PPA limits
- Simple educational materials on net metering and PPAs
- Effective communication from Dominion on net metering
- Financing for home energy efficiency measures
- Financing for roof repairs
- Pioneer installs



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Questions?





Links

<http://solar.the-mcelroys.com/>

Template LLC & PPA

<http://www.the-mcelroys.com/>

[Solar sizing on Norfolk emergency shelters](#)

[Norfolk Solar Qualified Opportunity Zone Fund](#)

[Pilot article on Norfolk Academy install](#)

[Pilot article on Norfolk Solar QOZ Fund](#)

[Op-Ed on OZ solar installs](#)

[Virginia Beach Companion Op-Ed on Solar QOZs](#)

[VB case study on Norfolk Solar QOZ Fund](#)

[Photos of Norfolk Solar QOZ installs](#)

[Story on the PPA cap featuring this Fund](#)

[Virginia OZ Map](#)

[Generation 180 – Solar on Schools](#)



[Feb 2021 podcast](#)

[Video on First Baptist Berkley / Andria](#)

[Clean Energy Group webinar Sept 2020](#)



Current Code for Residential Solar PPA

- [PPA Guidelines](#) contain the low-income customer language
- [Virginia code](#) points to HUD for median income definition
- From [HUD](#):
 - \$82,500 Norfolk Household median income family of 4
 - 80% of that is \$66,000
- [HUD User data](#) →

FY 2020 Income Limits Summary

Selecting any of the buttons labeled "Explanation" will display detailed calculation steps for each of the various parameters.

FY 2020 Income Limit Area	Median Family Income Explanation	FY 2020 Income Limit Category	Persons in Family							
			1	2	3	4	5	6	7	8
Virginia Beach-Norfolk-Newport News, VA-NC HUD Metro FMR Area	\$82,500	Very Low (50%) Income Limits (\$) Explanation	28,900	33,000	37,150	41,250	44,550	47,850	51,150	54,450
		Extremely Low Income Limits (\$)* Explanation	17,350	19,800	22,300	26,200	30,680	35,160	39,640	44,120
		Low (80%) Income Limits (\$) Explanation	46,200	52,800	59,400	66,000	71,300	76,600	81,850	87,150



Starting Norfolk Solar QOZ Fund

- Wanted to do more for disadvantaged
- Had capital gains
- Had involuntary 5 weeks off work
- Created map of solar-suitable homes in QOZs
- Worked with lawyers and accountants to set up structure

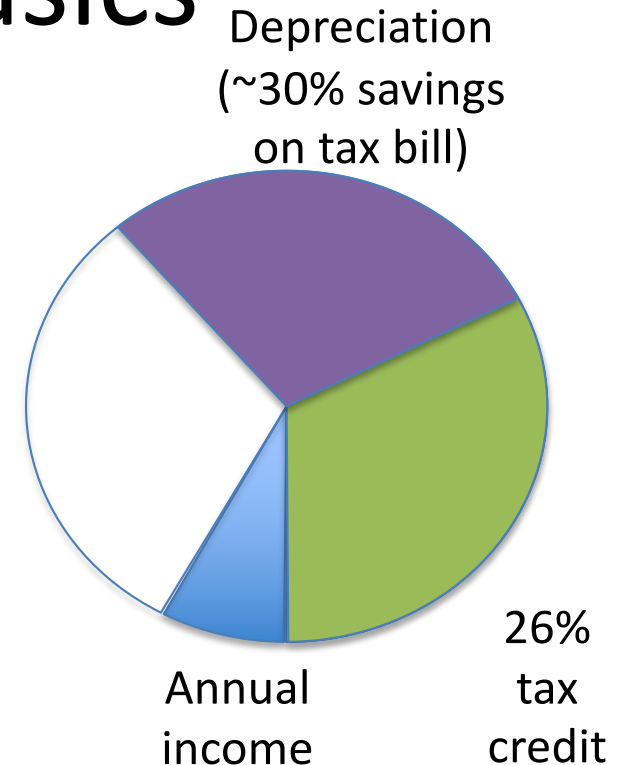


- Downsides:
 - Virginia law did not allow PPA with homes
 - Had to create 3 LLCs
 - Personal taxes became wildly more complicated



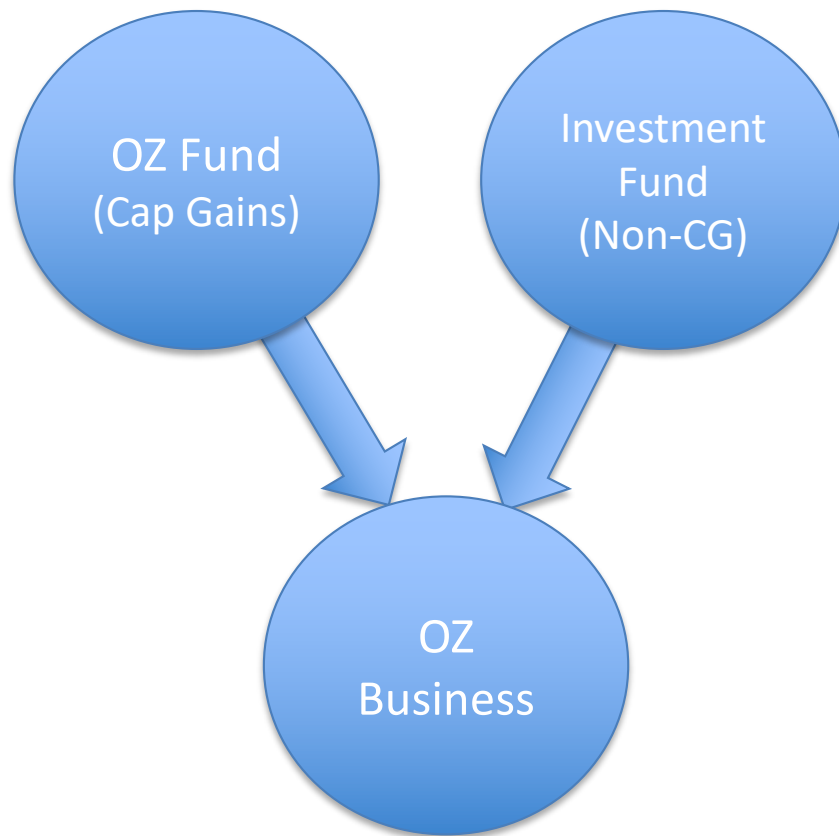
Solar OZ Fund Basics

- Finances of solar installation
 - 26% ITC
 - ~30% through depreciation
 - ~8% per year solar income
 - OZ Fund: use capital gains
 - Defer cap gains tax for 7 years
 - Eliminate 15% of cap gains tax
 - Most installs pay off with profit in <10 years
 - Must also invest non-cap gain funds to take depreciation
 - Most beneficial for investors with both capital gains and passive income
 - Passive income to take ITC and depreciation credits





Norfolk Solar QOZ Structure



- Top level:
 - OZ Fund (cap gains)
 - Non-CG Inv Fund
- Second tier:
 - OZ Business
 - Takes depreciation against non-CG
 - 70% investment rule
 - Buys & owns solar

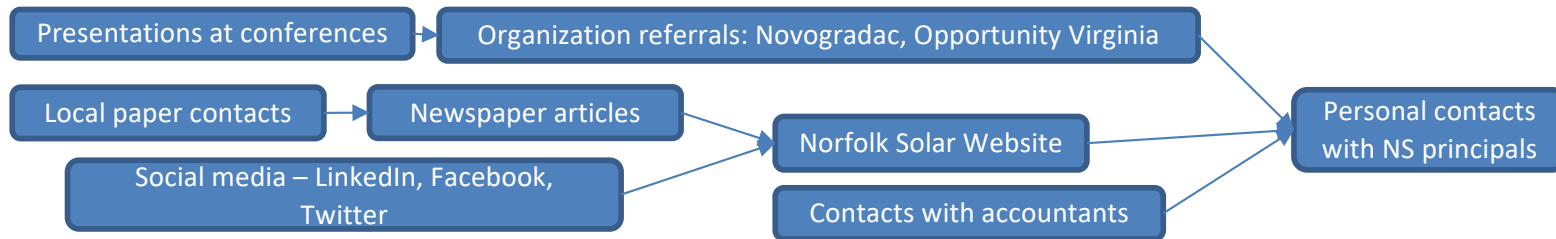


Norfolk Solar Installation Process

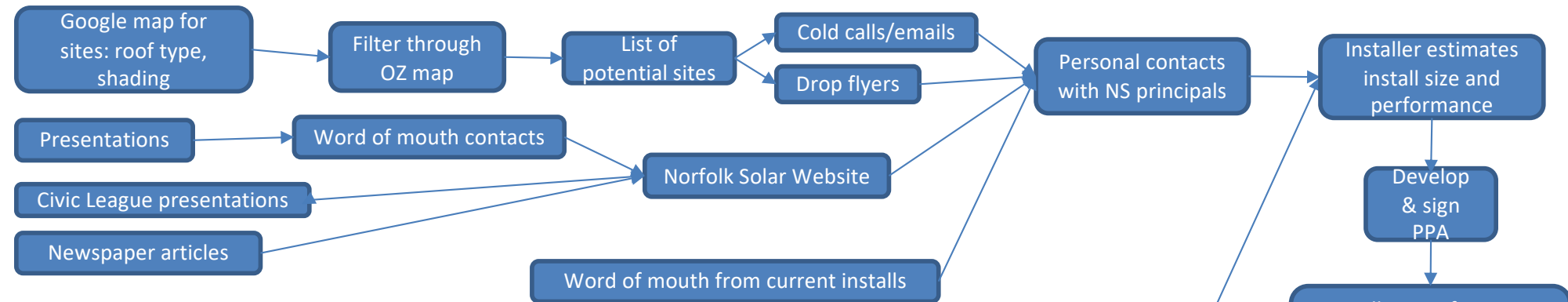
- Identify sites, design solar, find rate, plan payoff
- Discuss possible solar+storage plans
- Develop & sign PPA for solar payments
 - Payoff period 7-10 years
- Fund installs solar panels, owns/maintains during payoff period, site pays nothing
- Entity buys solar electricity from Fund, via PPA, using utility savings
- After payoff period, Fund sells array to site at minimal cost
- Other benefits: extended roof life, savings on air conditioning, decrease in demand charge, potential for battery power during outages



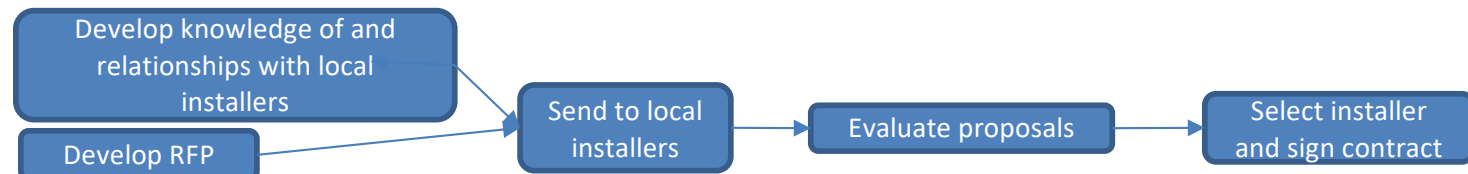
Process Flow



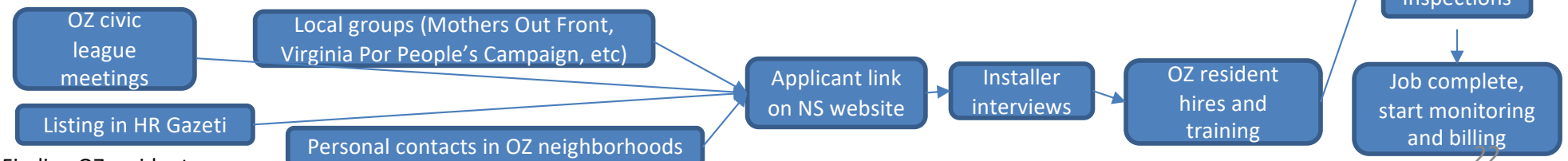
Finding investors



Finding sites



Finding installers



Finding OZ residents



Vision

- Resilient shelters in at-risk areas with solar+storage
 - Churches, schools, day cares, clubs
- Resilient homes in low-income areas with solar+storage
- Resilient businesses with solar+storage





Norfolk Solar QOZ Fund II

- Seeking funding to set up financial structure to take on commercial investors
- Actively seeking investors for Norfolk Solar QOZ Fund II
- Identified \$150M of potential solar sites in Hampton Roads
 - 8 million sq ft roof area
 - 90 MW solar
 - Includes large institutions, e.g. Norfolk State, ODU, Virginia Wesleyan, Oceana, VB convention center, Greenworks, Lynnhaven Mall
- Prospectus documents at [The Opportunity Exchange](#)
- Could lead to 200+ clean energy OZ jobs locally
- Others could duplicate in other areas of nation



Norfolk Solar QOZ Fund II Goals

- Equitable energy future
 - Cost neutral solar for OZ businesses, churches, homes
- Investor satisfaction
 - Dependable ROI
- Workforce development
 - On the job training in at-risk communities
- Community resiliency
 - Grid stabilization, clean and resilient power, diversify energy sources, storage for dependable power





What Can You Do

- Install your own solar
- Put solar on a non-profit and get your money back in ~8 years
- Form an LLC to solarize your favorite non-profit
- Encourage those with passive income to use to install solar
- Loan money to a solar installer to put in solar
- Ask your city/school board to install solar on schools via RFP *in the next year*
- Ask your city to implement C-PACE
- Ask your city to create resilient shelters with solar+storage
- Join Solar United Neighbors and their Google group discussion
- Join National Community Solar Partnership
- Ask investors to invest in solar in QOZs